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ABSTRACT

Examined are several tests designed to measure language development in retarded children and possible options for research. Past attempts (such as Berko's Test of Morphology) to evaluate retarded children's linguistic development are criticized for inadequate language definitions and invalid testing methods. Suggestions for data-gathering options are explored which include the use of traditional linguistic analysis and the development of a scale to classify the spontaneous utterances of young children. (SB)

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A COMMENT ON THE TESTING OF LANGUAGE DEVELOPMENT IN RETARDED CHILDREN[1]

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Technical Report 1.22

Center for Innovation in Teaching the Handicapped

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A Comment of the Testing of Language Development in Retarded Children[1]

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ABSTRACT

The development of good programs designed to alleviate the language problems of retarded children depends on knowledge of what those problems are. The present article is critical of past attempts to test the development of English in retarded and normal children on two counts: (1) definitions of language adequate for use in program development have not as yet been adopted by researchers; and (2) present methods of testing language development are totally inadequate. Suggestions for possible methods of data-gathering are made.

Virtually all workers in the field of retardation agree that retarded children have language problems. Just what these problems might be, however, appears to be an unanswered question at the present time.

There are several reasons for this present lack of knowledge. One of them is the confused definitional status of language. There appears to be a singular lack of agreement on what "language" means among researchers, and attempts to establish a research definition (e.g., Dever, 1966) apparently have gone largely unnoticed. As a result, research paradigms use the term, "language" almost with abandon, and attempts to make studies conceptually equivalent are difficult, at best.

Even if my suggestion for specifying the term "language" as referring to "a language" were widely accepted, however, there would still be major problems in developing adequate language-acquisition data. That is, it appears to be impossible, given current knowledge and techniques, to

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develop a test of the knowledge of American English on the part of retarded children. The present paper is addressed to this point. It is an attempt to demonstrate some of the problems which must be faced before any truly adequate programs for language development in retarded children can be developed. Good program development is based on good basic information simply because it is not possible to develop a program to alleviate a learning problem without first knowing what the problem is. At the present moment we do not have any really good idea of what the language problems of retarded children are, nor is there any easy way to find out.

There are a few studies which purport to show deficiencies in the abilities of retarded children to use specific grammatical features of American English. One such set of studies, for example, has utilized the test paradigm first developed by Jean Berko. This paradigm has been used in several places, e.g., Berko's Test of Morphology (Berko, 1958), Chappell's Picture Test of English Inflections (Chappell, 1968), and the Auditory-Vocal-Automatic (AVA) subtest of the Illinois Test of Psycholinguistic Abilities (ITPA) (McCarthy & Kirk, 1961). This test paradigm presents a picture to the child along with either a nonsense syllable or a real word stimulus, and requires the child to inflect the stimulus with the proper grammatical element, e.g., plurality, possession, verb past, etc. For example, one item in the AVA subtest of the ITPA presents a picture of a bed to a child and the tester says, "Here is a bed." Then two beds are shown to the child and he is told, "Now there is another one. There are two of them. There are two _____." To get a score of "correct" the child must respond, "beds." Chappell's test uses this form, as does Berko's test except that the latter uses nonsense syllables as stimuli.

A number of studies have used this paradigm with the retarded or have reviewed "file data" finding of its use (Bateman & Wetherel, 1964; Dever & Gardner, in press; Lovell & Bradbury, 1967; Mueller, 1967a; 1967b). All have reported retarded children to be less capable of using English inflections than normal children, even when the retardates and normals are matched on mental age. These studies are important as an illustration for two reasons: (1) the paradigm is seen as one of the best tests of linguistic proficiency available because of its simplicity (Slobin, 1967); and (2) it has been used as a diagnostic tool for the designing of programs of language remediation for the retarded (Blessing, 1964; Smith, 1962; and others).

Dever (1968) tested the ability of the test paradigm actually to predict errors made by retarded children while speaking. He found that while many children who scored 100% correct on the test also scored 100% correct in their speech, may other children scored 0% correct on the test and 100% correct in their speech. Correlations between test scores and free speech scores were quite low on every item, and for a few items the correlations were actually negative. Dever interpreted these results as demonstrating that the basic test paradigm was not able to predict errors in the free speech of retarded children, and, therefore, could not be used as a basis for deciding what was to be taught in a language program. This held equally true for both the nonsense syllable form as used by Berko, and for the real word form as used in the ITPA, and by Chappell.

It is very important to note that the above test paradigm attempts to assess the development of a very minor aspect of English grammar, i.e., the inflectional morphology. When considered in relation to the language system

as a whole, inflectional morphology is relatively unimportant in the total grammar of English, and the failure of a simple test of inflections to predict errors is indicative of the problems involved in the testing of the more complex features of English. The present writer has made many informal attempts to test other features of English in retarded children with a singular lack of success. A good example of the kind of thing that happens is found in one of the many attempts I made to find out what retarded children know about English. I tested one little mongoloid girl for her knowledge of certain prepositions. I had a picture of a girl, a boy, a playground, trees, and a ball flying through the air; they were contructed so that each picture could be projected singly or combined in such a way that the boy was seen as throwing the ball to the girl in the playground under the trees. I showed the picture of the girl to the little girl I was testing, and then, separately, showed the picture of a tree. When I combined the two pictures, of course, I should have been able to elicit the phrase, "under the tree." Each time I asked the little girl where the girl was she pointed to the screen and answered, "Up there." No matter what preposition I tried to get her to use, the same thing happened. Obviously, the little girl knew something about prepositions, but I was unable to discover how much she knew. Evidently, extra-linguistic factors inherent in the testing procedure preclude accurate assessment of the capabilities of retarded children to demonstrate their ability to handle American English on tests.

Unfortunately, the same situation is likely to exist in the case of testing language development in nonretarded children as well. Another very simple test of linguistic development is that of phoneme discrimination (Templin, 1943, 1947; Wepman, 1958, 1960). The only thing phoneme discrim-

ination tests attempt to do is to discover whether a child can tell the differences between two minimally different linguistically significant sounds. Presumably the assumption behind the use of these tests is that a child who can tell the difference is linguistically more sophisticated than one who cannot. Phoneme discrimination tests all use about the same paradigm, i.e., the examiner usually presents the child with two minimally different words or syllables, e.g., pan - ban, and is asked to tell if these words are "the same or different." Most of these tests produce error rates which are higher than would be expected on the basis of articulation tests (Rudegeair & Kamil, 1969), therefore, some sort of extra-linguistic task variable is likely to be operating.

Rudegeair and Kamil (1969) explored the validity of these phoneme discrimination tests. They found that simply by presenting the tests on two successive days errors were markedly reduced. In addition, they found that a different presentation of the test stimuli also markedly reduced errors. This was done in the following way.

On a stereo tape recorder one of the stimulus pairs to be discriminated was recorded on one track of the recording tape. After a short time interval, the other half of the pair was recorded on the other track. Then the question, "Who said (stimulus)?" was recorded on both tracks simultaneously. Speakers were placed 180° apart, one on either side of the child. When the tape was played, one speaker gave one stimulus, e.g., pan, and the other speaker gave the other stimulus, e.g., ban, and then simultaneously both speakers gave one of the two previous stimuli, e.g., "Who said ban?" The child's task was to press a lever on the correct speaker. Errors were markedly reduced by this device. It is still unknown whether this method of testing will yield accu-

rate assessments of a child's phonemic inventory, however. Until the predictive validity of the method is explored, perhaps as Dever (1968) did for the Berko-type paradigm or by some other method, it must remain an open question.

The Dever (1968) and Rudegeair and Kamil (1969) studies present illustrations that much of the test data which has been recorded on the development of linguistic features both in retarded and intellectually normal children is likely to have limited utility in program development. If it were possible to develop test paradigms for all aspects of language that were as clever as the stimulus presentation used by Rudegeair and Kamil (assuming that theirs has predictive validity), it might be possible to modify this statement. Unfortunately, however, such paradigms are not available, and the conclusion that testing of the development of a language lackes validity appears to be justified. This conclusion is further strengthened when one considers the minor nature of the features tested by the above tests. If testing these features of language is so difficult, what difficulties will have to be faced when the attempt to test the more complex features of English is made? For example, what problems will be encountered when we try to test the development of the English verb modal system, or the intricacies of the noun phrase? Yet we must indeed be able to diagnose language problems and to assess the efficacy of any teaching programs which we institute.

If direct testing of language development appears to be so difficult, what are some of the options open to researchers in the field for the discovery of the linguistic status of retarded children? The following cannot in any way be considered an exhaustive list. It is simply one set of suggestions that

grows out of my experiences and biases. Others undoubtedly could extend the list much further.

One possibility is the use of traditional linguistic analysis. There are a number of drawbacks to this approach, however, which are likely to make it unfeasible. In the first place, the training required to do this type of analysis is long and difficult, and not many workers in mental retardation have undertaken to obtain it. In the second place, once a trained person begins work, a great deal of time is needed to develop a small amount of data into meaningful results. In the long run, total reliance on traditional linguistic analysis may be unrealistic.

Another possibility is to train observers to gather data on specific features. However, this too presents problems. Even if persons in the field were to obtain training in the observation of relevant features, it is first necessary to have some notion of what features to look for during the observation. Unfortunately, most work to date in child language development has been done with children over the age of three years (Menyuk, 1969), and very little is known about the linguistic development of children below this age. The possibility of gathering data on young retarded children with an eye to establishing programs which would prevent deficits from accumulating is not great. Even in the area of the language development of children over CA 3, the relevant information is somewhat sparse because the subjects used have been, for the most part, children of professionals and graduate students. Although these children are relatively accessible for study, they tend to be very bright, and the establishment of norms on the basis of the existing information is, at best, difficult.

Another possibility is to launch a concerted attack on the error factors in traditional testing. If we could find out what situational factors were operative in the actual testing of language, perhaps adjustments could be made to obtain results which would yield fairly accurate assessments of the children's ability to use the language. This, however, would require much more sophistication than is presently available in the field.

Another possibility is the development of a scale which could be used to classify the spontaneous utterances of very young children. A scale of this type would require the use of classification categories. These would have to be in the form of abstractions of the utterances which are possible in child language in order that the scale could be compact enough for use. This can be done through the device of grammatical categories. It would not be possible to make up a list containing every sentence which could be uttered by a child because children, like all users of a language, are capable of generating an infinite number of sentences. However, if the rules of the sentences made by children could be listed, it would be a finite list, and this is a definite possibility. Such a list would allow those rules to be scaled according to their complexity of development. Norms could then be established for the appearance of these rules by chronological age or other indices of development. Lenneberg (1967), for example, ties language development to maturation which means that it is possible that maturational indices of motor development such as the ability to tiptoe might prove to be important concomitants of language development. At any rate, it would be possible to establish levels of language development through such a device, and to make judgements as to whether a specific child needs language development training.

Lee (1966) appeared to have developed such a scale, but we encountered some difficulties in using the scale as it was first published. We found a large number of utterances which could not be classified because of certain ambiguities in the scale or because the scale required such information as, "What did the child mean by this?" There were also some instances where the same utterance could be classified in two categories, and a few instances where provision had not been made for utterances which appeared. These are not major criticisms of Lee's work; in fact, work has been proceeding at Indiana in the development of a scale similar to Lee's because the basic idea behind it seems eminantly worthwhile.

This is not a final list of suggestions; other workers could and should investigate other possibilities. The major point to be made, however, is that much more care must be taken than has been the case in the past.

Rosenberg (in press) points out that the first task for researchers is to know what it is they are investigating when they do language research. It is possible to argue with Rosenberg's contention that transformational grammars are the only theoretical contenders for developmental research, but the point cannot be denied: concepts of "language" in the research literature dealing with the retarded are extremely weak and inefficient and can be challenged at every point. Rosenberg makes several other great suggestions, all of them dependent on knowing what "language" is. Researchers in the field would do well to attend closely to his list.

The second task, assuming completion of the first, is to realize that just because we want to test language development, we cannot assume that we can do so with existing instruments and/or techniques. On the contrary, a great

deal more hard work, hard thinking, and good data-collecting needs to be done before we can develop adequate programs to help the retarded overcome the language deficits which are so apparent to informal observation. The task at hand is to find out what the problem is, and the time to begin was yesterday.

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